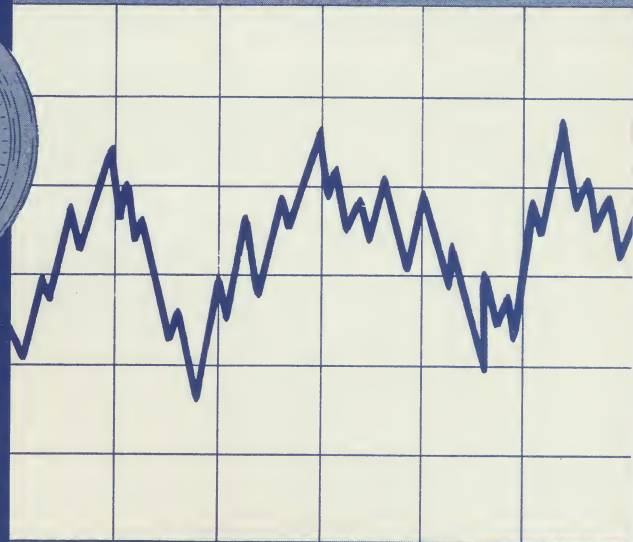


C-E-I-R^{INC.}



Announcing a two day Seminar:

How To Use TIME SERIES IN BUSINESS FORECASTING

Washington, D.C., January 12-13
Los Angeles, February 18-19



INSTITUTE FOR ADVANCED TECHNOLOGY

Time Series Forecasting Course

C-E-I-R Institute for Advanced Technology
1200 Jefferson Davis Highway
Arlington, Virginia 22202

FIRST CLASS

U.S. POSTAGE

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C-E-I-R^{INC} is an international applied research and data processing corporation that offers analytical, scientific and computer services to business, science and government. Founded in 1954, it is today the world's largest, most experienced and best equipped independent organization in its field. The C-E-I-R professional staff includes several hundred mathematicians, statisticians, economists, operations researchers, management scientists and others from a variety of disciplines. In addition, scores of the finest scientific and professional brains in America are retained on a consultant basis. Augmenting this professional capability are the most modern electronic computing equipment in use today, skilled computer programmers and operations personnel at computing centers in five major U.S. cities, London and Mexico City.



is the latest expression of C-E-I-R's long-standing involvement in the educational challenges associated with the new management techniques and scientific tools introduced with the electronic computer. The revolutionary nature of computer-based methods made education an integral part of C-E-I-R operations from the beginning. This relationship is formalized through the Institute for Advanced Technology. IAT faculty members are drawn primarily from the ranks of C-E-I-R's professional and computer operations staffs. Its curriculum is drawn from subjects in which C-E-I-R staff members are expert — recognized for excellence in day-to-day application of the art and science of computer usage to the real problems of C-E-I-R customers in business and industry. Sharing these new skills through seminars in major cities, management clinics, and special, in-plant training programs is the major goal of the Institute for Advanced Technology.

Time Series Analysis in Business Forecasting

A two-day technical seminar on techniques of time series analysis and application of this computer technique to forecasting, planning and control.

Lecture and discussion periods cover basic problems encountered in analyzing time series data; types of models and procedures used to isolate and measure the basic components (with particular reference to Census Method II, National Bureau of Economic Research Additive Seasonal Adjustment Program), and environmental, cost and statistical criteria in designing computer applications.

Intended for data processing executives seeking improved computer analysis of historical data, and staff specialists who need to understand the logic and applications of time series analysis.

Seminar Locations:

Washington, D.C.

January 12 - 13

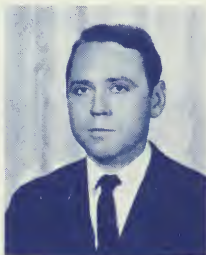
International Inn
Thomas Circle
14th & M Streets, N.W.

Los Angeles

February 18 - 19

Santa Ynez Inn
17310 Sunset Blvd.
Pacific Palisades, Calif.

The Lecturer: George W. Taylor, an economist with C-E-I-R, Inc., has specialized in studies of industry structures and business cycles as well as the application of econometrics to practical cases. His specialty is business forecasting systems. Mr. Taylor holds a masters degree and has completed course work and residency requirements for his Ph.D. in economics from Ohio State University. He is an Associate in Economics at George Washington University in Washington, D.C., and his background includes formal teaching in the field of economics.



Guest Speaker: The luncheon speaker, Dr. Jack Moshman, is the vice president, professional services, for C-E-I-R, Inc., and manager of the firm's Statistical Division. He holds a Ph.D. in Mathematics and is the author of fundamental research papers in that field. Moshman's forecasting experience includes direction of the C-E-I-R group that programmed NBC/TV computers used in coverage of the 1960 and 1962 elections and performed the same service for ABC/TV in 1964.



Registration: Fees for this seminar are \$125 for the first student from any one organization and \$110 for each additional student from the same firm. Fees include tuition, course materials, and mid-day meals. Classes begin at 9 a.m. Hotel rooms are not included, but the IAT representative in Washington or Los Angeles will assist on request.

Course Outline

DYNAMIC USES OF HISTORICAL DATA: Evaluation of past performance . . . Diagnosis of present conditions . . . Forecasts for future operations.

FALACIES IN USE OF SAME-MONTH-YEAR-AGO COMPARISONS: Origins of modern techniques to analyze time series . . . contributions of computer technology.

STATISTICAL CONCEPTS: Randomness . . . expected value . . . variation . . . stationarity . . . autocorrelation . . . periodicity . . . statistical significance.

CHARACTERISTICS OF TIME SERIES: Seasonality . . . trend-cycle . . . irregularity.

MOVING AVERAGES: Definition . . . Changes in length and weighting . . . centering.

MEASURING SEASONALITY: Centering seasonal factors . . . smoothing seasonal factors . . . stable factors . . . projecting factors.

MEASURING IRREGULARITY: Properties and interpretation of the irregular.

MEASURES OF TREND-CYCLE: I/C ratio for months span . . . months for cyclical dominance (MCD) . . . moving average of seasonally adjusted series.

SOME TRICKS OF THE TRADE: Adjusting for variation in calendar periods and trading days . . . adjusting the original series for the effect of unusual events.

APPLICATION OF TIME SERIES ANALYSIS: Long-range planning . . . capital budgeting . . . new product development and marketing . . . short-term inventory problems . . . production control . . . evaluating sales performance . . . timing advertising outlays.

Winter Seminar Schedule

Detailed information about these IAT seminars will be mailed to you on request.

MO.	DATE	SUBJECT	PLACE
November	24, 25	Linear Programming	Wash., D. C.
	30 }	Power Systems	Wash., D. C.
December	1, 2, 3 }	Power Systems	Wash., D. C.
	8, 9, 10	PERT, CPM, PERT/Cost	Los Angeles
	8, 9	Linear Programming	Philadelphia
	15, 16, 17	PERT, CPM PERT/Cost	Wash., D. C.
	15, 16	Resource Allocation	Los Angeles
January	12, 13	Time Series Analysis	Wash., D. C.
	27	Monte Carlo Techniques	Los Angeles
February	13	Monte Carlo Techniques	Wash., D. C.
	16, 17, 18	PERT, CPM, PERT/Cost	Wash., D. C.
	18, 19	Time Series Analysis	Los Angeles
	24, 25	Linear Programming	Los Angeles
	24, 25	Resource Allocation	Wash., D. C.
March	8, 9, 10, 11	Power Systems	Los Angeles
	16, 17	Linear Programming	Wash., D. C.
	16, 17	Resource Allocation	Los Angeles

REGISTRATION INFORMATION

Return this form to: Registrar, C-E-I-R Institute for Advanced Technology. For Washington, D.C., seminar, mail to: 1200 Jefferson Davis Highway, Arlington, Virginia, 22202. For Los Angeles seminar, mail to: 9171 Wilshire Boulevard, Beverly Hills, California, 90210. Please make checks payable to C-E-I-R, Inc.

Please reserve _____ places at the Time Series Analysis seminar.

I will attend the seminar in (Check one):

☐ Washington
Jan. 12, 13

☐ Los Angeles
Feb. 18, 19

Check enclosed ☐ Bill Company ☐

Registrant's Name _____ Title _____

Other Students' Names _____

Business Address _____ Telephone _____

